BLENDING HIGH NITRATE HAY*

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High-nitrate feeds can be diluted with low nitrate feeds to reduce the nitrate hazard by using the following equation:

W_L = (W_H) (%H-%B) / (%B - %L) where

W_L = weight of safe, low nitrate hay required

W_H = weight of high nitrate hay

%H = nitrate concentration of high-nitrate hay

%B = nitrate concentration of desired final blend

%L = nitrate concentration of low-nitrate hay required in blending

Example:

- **A producer has 30 tons of high nitrate oat hay (1.5%).**
- **The producer needs to know how many tons of low-nitrate alfalfa hay (0.1%) he/she needs to blend with the high-nitrate hay to make a final blend of 0.3% nitrate feed.**

  W_H = 30 tons
  %H = 1.5%
  %B = 0.3%
  %L = 0.1%

  W_L = (30 tons) (1.5% - 0.3%) / (0.3% - 0.1%)
  W_L = (30 tons) (1.2%) / (0.2%)
  W_L = (30 tons) (6)
  W_L = 180 tons

- **The producer would need to blend 180 tons of the low-nitrate hay with the 30 tons of high-nitrate hay to make a blend containing 0.3% nitrate.**
- **The two lots should be processed and mixed thoroughly in a tub grinder to provide the proper dilution.**
- **Levels of non-protein nitrogen (urea, etc.) and nitrates in drinking water should be considered.**

* Prepared by: Paul V. Dixon, former Yellowstone County Agricultural Agent